

### **REMARKS/ARGUMENTS**

In the most recent Office Action, claims 4-10, 13-14 and 16-17 were examined. Claims 4-10, 13 and 16-17 are allowed. Claim 14 is rejected. No new matter is added.

Applicant acknowledges with thanks the allowance of claims 4-10, 13 and 16-17.

Applicant also thanks the Examiner for the search and consideration of the present application, and responds to the comments in the Office Action as follows.

#### **Claim Rejections - 35 U.S.C. §103**

The Office Action states that claim 14 is rejected under 35 U.S.C. §103(a) as being unpatentable over admitted prior art in view of Hodge et al. (U.S. Patent No. 4,784,452) and Greer (U.S. Patent No. 4,182,545). In particular, the Office Action states that the claimed structure is prior art, with the substance having a smaller refractive index than a semiconductor layer being merely a coupling agent that is well known in the art. Applicant respectfully traverses the rejection.

Applicant respectfully submits that Figures 1 and 2 in the present application do not disclose the structure claimed in claim 14. Applicant directs the Examiner's attention to Figure 32 of the application, which is described in the specification in pages 142-147. In particular, Applicant points out the particular characteristics of the P electrode 287 formed in a ring shape upon which is placed a substance having a smaller refractive index than a semiconductor layer. Examples given in the specification are air, inorganic substances such as SiO<sub>2</sub> or SiN<sub>x</sub> or organic substances such as polyimide or epoxy. These structures are not shown in Figures 1 or 2.

In addition, the substance is not a coupling agent, as is stated in the Office Action. Instead, the substances are, for example, applied such that "said transit light is totally reflected by said smaller refractive index substance terminating said upper layer," as is recited in claim 14.

The disclosures by Hodge et al. and Greer fail to show the use of a substance that causes transit light to be totally reflected at the upper layer of the photo-absorption layer due to the substance with the smaller refractive index. Although both Hodge et al. and Greer appear to show coupling agents, these agents appear to be used in the connection of two optical elements, with light transiting through the substance, rather than being totally reflected by the substance, as

is the case in the invention recited in claim 14. That is, the junction media 24 disclosed by Hodge et al. must transmit a ray of light emitted from bus fiber 10 to work properly. Similarly, the material 25 mounted to the photo-detector 22 in the disclosure by Greer is solid, resilient and optically clear, i.e., it transmits at least 90% of incident light therethrough without scattering (col. 3, lines 22-28).

Because the invention recited in claim 14 is different from the prior art of Figures 1 and 2 in the application, and also reflects rather than transmits light at the upper layer of the P electrode, Applicant respectfully submits that a *prima facie* case of obviousness against claim 14 has not been established. That is, none of the cited prior art discloses all of the claim limitations, either alone or in combination. Accordingly, Applicant respectfully requests that the rejection of claim 14 under 35 U.S.C. §103(a) be reconsidered and withdrawn.

### Conclusion

Applicant respectfully believes that the present response addresses all outstanding issues raised in the most recent Office Action. Furthermore, Applicant respectfully believes that in view of the above discussion, all claims in the present application are now allowable, and earnestly solicits notice to that effect. If it is believed that an interview would contribute to progress in the application, the Examiner is requested to contact the undersigned counsel at the number provided below.

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as First Class Mail in an envelope addressed to: Commissioner of Patents and Trademarks, P.O. Box 1450, Alexandria, VA 22313-1450, on January 30, 2004

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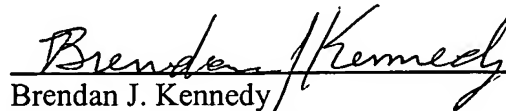
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January 30, 2004

Date of Signature

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Respectfully submitted,



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